EUROPEAN TELECOMMUNICATION STANDARD

ETS 300 119-4

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Equipment Engineering (EE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is part 4 of a 4 part ETS aimed at setting out, on a common basis, the engineering requirements for telecommunication practice, for housing equipment forming part of a public telecommunications network. Part 1 is a general introduction and explains the terminology used, Part 2 specifies the engineering requirements for racks and cabinets and Part 3 specifies the engineering requirements for miscellaneous racks and cabinets. This part, Part 4, specifies the engineering requirements for subracks mounted in miscellaneous racks and cabinets.

This ETS applies to all telecommunications equipment forming part of the public telecommunications network. The requirements for subracks mounted in miscellaneous racks/cabinets, which this part lays down, are based on the work of IEC Technical Committee 48D. However, in this part of the ETS deviation from the work of IEC Sub Committee 48D occurs (see Annex B).

Illustrative figures are contained in Annex A.

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1 Scope

This part of European Telecommunication Standard (ETS) 300 119 details requirements for subracks for use in miscellaneous racks/cabinets, as described in ETS 300 119-3 [4]. The subrack will normally be supplied as a fully assembled structure, unequipped, partially equipped or fully equipped with plug-in units, etc.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] EN 60 950 (1988): "Safety of information technology equipment, including electrical business equipment".

[2] Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC): 89/336/EEC.

[3] ETS 300 019: "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment".

[4] ETS 300 119-3: "Equipment Engineering (EE); European telecommunication standard for equipment practice Part 3: Engineering requirements for miscellaneous racks and cabinets".

3 Dimensions for subracks

The dimensions height H, width W and depth D1 and D2 of the equipped subrack shall include all plug-in units, switches, lamps, cooling fins, connectors, etc.

For a table of dimensions, see table 1 and refer to Annex A, figures A.1 and A.2.

4 Accessibility

Subracks fitting in a miscellaneous rack/cabinet of depth 300 mm shall require access only from the front, so that they can be placed in miscellaneous racks/cabinets which are back to back or against a wall.

5 Heat dissipation

5.1 Subrack heat management

It is a primary requirement for all equipment installed in miscellaneous racks/cabinets to be cooled by natural convection. The mechanical architecture of the subrack shall be designed to promote natural convection.

Assisted cooling methods should be employed only when it has been established that natural convection methods are unable to deal with the relevant heat dissipation.

The design of any subrack shall be such that when fully equipped with plug-in units and standing alone, the relevant components are not subjected to temperatures which exceed the maximum quoted by the component suppliers. This shall apply over the full operating room ambient temperature range selected from ETS 300 019 [3].

NOTE: Internal cabling of the subrack is considered as a component.

5.2 Component temperature

The equipped subrack supplier shall have available all the relevant component temperature information criteria, used to ensure that reliability targets are met. On request, the supplier shall be able to verify that the temperature criteria used for the design of a specific product have been met.

5.3 Miscellaneous rack/cabinet thermal planning

On demand, the supplier shall provide administrations, operators or customers with the nominal total dissipation of the equipped subrack and other relevant information for miscellaneous rack/cabinet thermal planning and management purposes.

6 Weight

6.1 Unequipped subrack

Unequipped subracks shall have a maximum weight of 18 kg for safe handling. Supply of subracks exceeding 18 kg, if requested, shall be agreed between the supplier and user.

6.2 Equipped subrack

On demand, the supplier shall provide administrations, operators or customers with the total weight of the equipped subrack to enable the fully equipped miscellaneous rack/cabinet weight to be determined for telecommunications centres and customer site floor loading calculations.

7 Temperature limits

The temperature rise of touchable parts shall be in accordance with EN 60 950 [1], table XIII, part 2. These requirements are included to ensure the safety of personnel.

The specified temperature rises are based on the assumption that the room ambient temperature will be 25 ºC when the equipment is in operation. If the equipment in final use is intended to be operated in a higher room ambient temperature, the limits of temperature rise shall be reduced by the difference between the higher ambient temperature and 25 ºC.

8 Electromagnetic compatibility and electrostatic discharge requirements

Subracks to be installed in miscellaneous racks/cabinets must take account of the EEC Council Directive on the approximation of laws of the Member States relating to electromagnetic compatibility (Directive 89/336/EEC [2]). In accordance with the terms of this Directive, due regard shall be taken of the appropriate existing and emerging standards concerning electromagnetic compatibility phenomena.

Table 1

(see also Annex A, figures A.1 and A.2) Dimensions in mm.

Dimensions for subracks mounted in miscellaneous racks/cabinets		(NOTE 2)				
H	= height	C	n x 25			
W1	= overall width over flanges	C	535 (NOTE 1)		535	
W2	= width	C	450		500	
W3	= mounting centre distance	A	515 (NOTE 1)		515	
R	= mounting position	C	12,5 + n x 25		12,5 + n x 25	
S	= mounting	A	n x 25		n x 25	
D1	= mounting depth (front)	C	rack 300 deep	rack 600 deep	rack 300 deep	rack 600 deep
			40	75	40	75
D2	= mounting depth (rear)	C	240	470	240	470

NOTE 1: Subracks with dimensions W1 =485 and W3=465 may be fitted into miscellaneous racks (ETS 300 119-3 [4]) by the use of adaptors.

NOTE 2: A = Actual dimension.

Tolerances needed for W3 and S are specified in IEC 917-2-2 (see Annex B).

C = Coordination dimension.

NOTE 3: n = 0, 1, 2, 3....(the value of n can be different for H, R and S).

Definition: A coordination dimension is a reference dimension used to coordinate mechanical interfaces. This is not a manufacturing dimension with a tolerance.

An aperture dimension is a special coordination dimension for a usable space between features.

An actual outside dimension corresponding to a coordination dimension can only decrease.

An actual inside dimension corresponding to an aperture dimension can only increase.

Annex A (informative): Illustrative figures

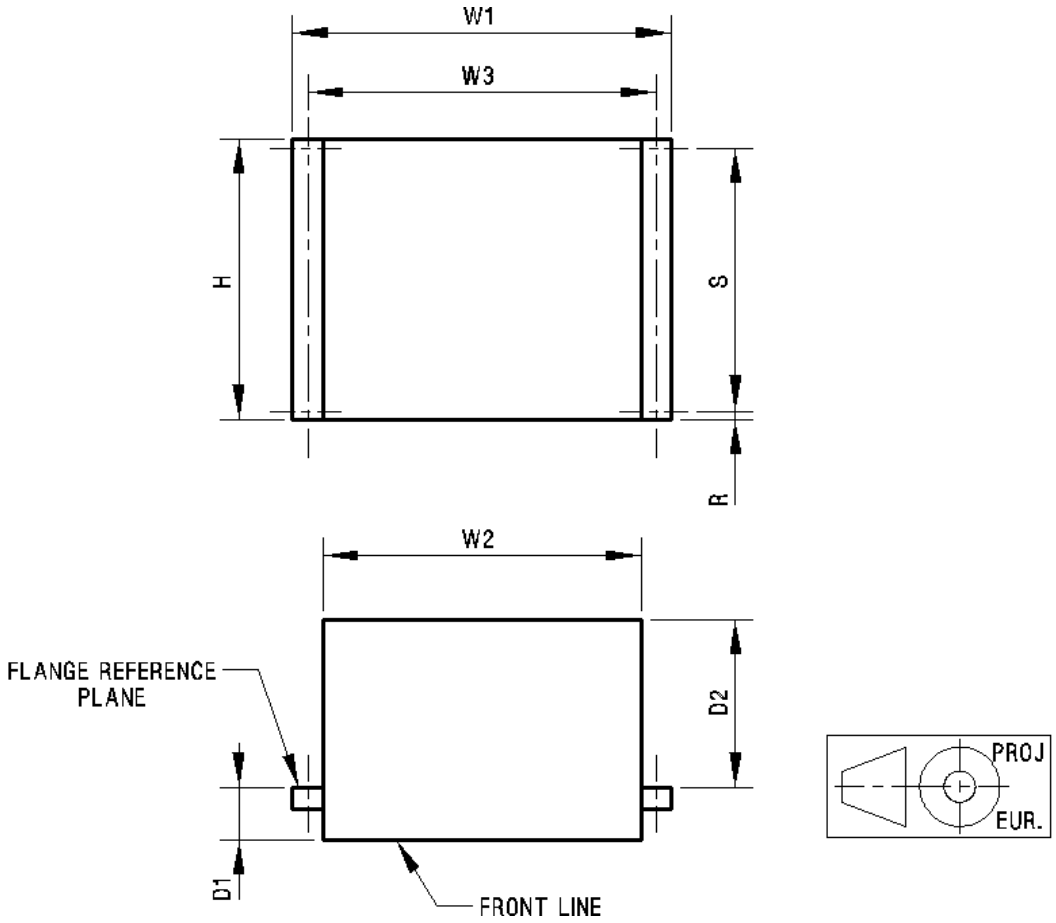

Figure A.1: Subrack

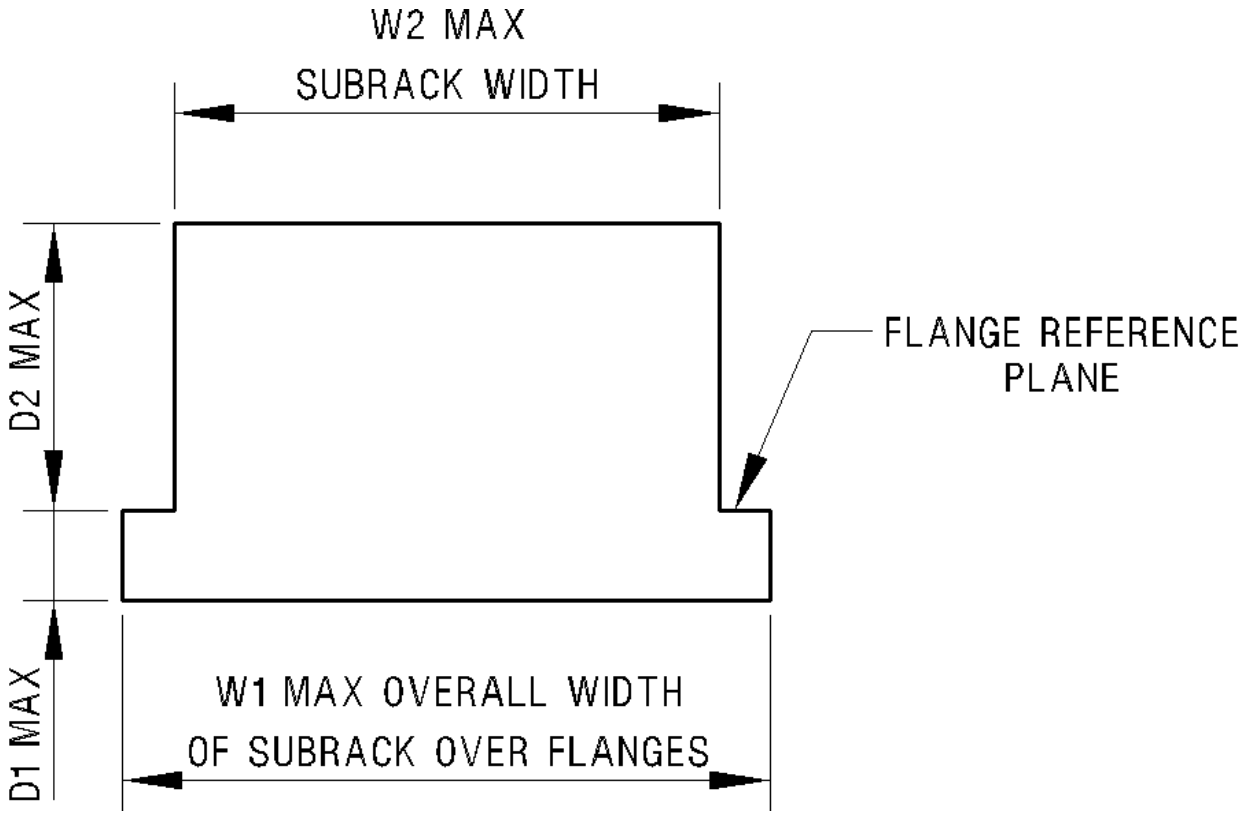

Figure A.2: Subrack

Annex B (informative): IEC Sub Committee 48D publication

This ETS is based on the following standard, however, in this part, Part 4 of the ETS, deviation from that standard occurs.

"Modular order for the development of mechanical structures for electronic equipment practices. IEC 917-2: Sectional standard: Interface co-ordination dimensions for the 25 mm equipment practice".

IEC 917-2-2 is currently following approval procedure as IEC 48D(CO)32.

History

Document history	
January 1994	First Edition
February 1996	Converted into Adobe Acrobat Portable Document Format (PDF)